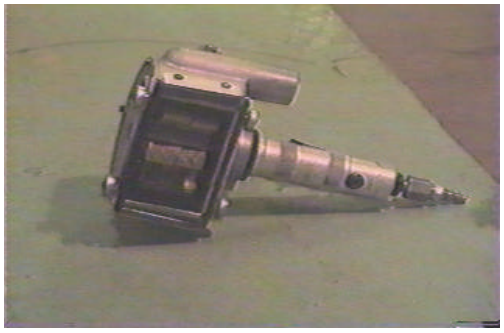
Technology Demonstration Summary Sheet
Milling Decontamination

THE NEED

The treatment of radioactively contaminated concrete is a concern during the decontamination and decommissioning (D&D) process. The primary decontamination objectives are: (1) a reduction in the surface contamination levels to reduce potential personnel and environmental exposure, and (2) the reduction of surface contamination levels to meet regulatory criteria for unrestricted use.

THE TECHNOLOGY

Pentek, Inc. milling technology is a method for removing contaminated coatings on concrete and steel located on floors, walls, ceilings, and structural components. The system uses a hand-held ROTO-PEEN scaler with localized exhaust. The scaler is equipped with 3M™ Heavy Duty Roto Peen Flaps, each studded with rows of tough tungsten carbide cutters and mounted on a rotating hub. The debris removed by the ROTO-PEEN scaler is simultaneously collected in a VAC-PAC®, High Performance HEPA Vacuum/Drumming System.



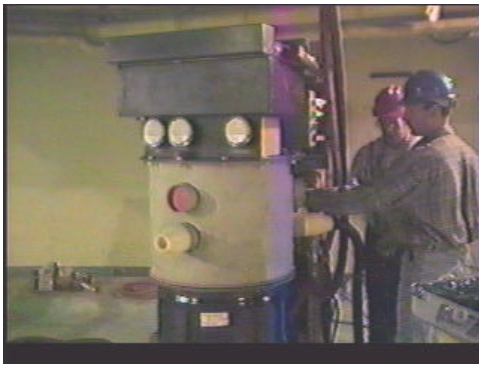
PENTEK, Inc ROTO-PEEN Scaler

THE DEMONSTRATION

This demonstration tested the Pentek, Inc. milling technology for its ability to decontaminate approximately 650 square feet of concrete flooring by removing the coating layer without removing the concrete. The vendor was not required to remove additional concrete if radiological levels were still above background levels. The testing was performed on the service floor of the ANL - CP5 facility, Building 330, as part of the Large Scale Demonstration Project funded by DOE's Federal Energy Technology Center.

THE RESULTS

The ROTO-PEEN Scaler removed the concrete coating from the 650 square feet of floor area at a production rate of 40.6 sq. ft./person-hour. Seven locations within the CP-5 testing area were found to have elevated gross beta readings prior to the demonstration. The average total beta/gamma level for these locations was 8,300 dpm/100 cm^2 with a maximum reading of 13,500 dpm/100 cm^2. After Pentek, Inc. completed the demonstration, the average total beta/gamma level for those same locations was now less than 2,400 dpm/100 cm^2 with the maximum reading now at 5,900 dpm/100 cm^2. The Pentek technology released no visible dust during the demonstration. Approximately 2.47 cubic feet of waste was generated in the form of small, powdery paint chips.



PENTEK, Inc VAC-PAC

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